



Oregon

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Also sent via e-mail

Chip Humphrey and Eric Blischke
U.S. Environmental Protection Agency, Region 10
805 SW Broadway, Suite 500
Portland, OR 97205

Dear Chip and Eric,

The purpose of this letter is to express DEQ's concern with one issue regarding EPA/partners' draft Remedial Action Objectives (RAOs) as presented in Eric's 7/2/09 e-mail to both the Lower Willamette Group (LWG) and EPA/partners' Technical Coordinating Team. The specific issue involves the use of the word "groundwater" in RAO 1 and RAO 4. I'll focus my discussion on RAO 1 for simplicity, and because the points I'll make regarding RAO 1 also apply to RAO 4.

The 7/2/09 iteration of RAO 1 is:

"Comply with ARARs and reduce to acceptable levels human health risks from exposure to contaminated sediments and groundwater resulting from incidental ingestion of and dermal contact with sediment and groundwater."

The supporting text accompanying RAO 1 in Eric's 7/2 e-mail states:

"This RAO is intended to include exposures that occur either primarily through the solid or groundwater portions of the sediment matrix or both."

I understand the intent of the word "groundwater" in both RAO 1 and the supporting text is to describe the water fraction of the sediment matrix. In previous iterations of RAO 1, EPA used the terms "pore water" or "transition zone water" rather than "groundwater". I believe either the term "pore water" or "transition zone water" are more appropriate than "groundwater" because they more clearly define the precise physical medium where exposure is suspected to occur. RAO 1 describes exposure to the solid and liquid portions of sediment. The terms "transition zone water" and particularly "pore water" describe the liquid portion of sediment more accurately and less ambiguously than "groundwater". Furthermore the use of the term "groundwater"..., particularly without the benefit of text specifically defining "groundwater"..., could be interpreted to mean groundwater in the uplands, which I understand is not addressed by the RAOs, and which, in DEQ's view, would be beyond the scope of the NPL listing and inconsistent with the interagency MOU and DEQ management of upland facilities under state law.

The terms “pore water” and “transition zone water” generally apply to the water found in sediment, while “groundwater” generally applies to water in an aquifer typically either below or upgradient to sediment. However, I’m not aware of bright-line depth or standard that separates groundwater from pore water or transition zone water. I further understand at least one of the reasons EPA substituted the word “groundwater” for “pore water” or “transition zone water” was to apply the RAO to groundwater beneath the river..., and most specifically to groundwater downgradient to upland source control (e.g., vertical hydraulic barrier cutting off groundwater flow from the uplands to the river)..., that is, what’s previously been described as the “stranded wedge”.

I suggest EPA consider one of two options to resolve my concern. The 1st option would be to go back to the original language and use either the term “pore water” or “transition zone water” rather than “groundwater”. The 2nd option is to include a definition of the term “groundwater” (which would include “pore water” or “transition zone water”) and how in these RAOs, “groundwater” should be thought of as groundwater beneath the river or in the stranded wedge.

Sincerely,

Jim Anderson, Manager
Portland Harbor Section

cc: Matt McClincy, DEQ NWR Region
Kurt Burkholder, ODOJ